

E-LEARNING WORKS—EXACTLY HOW WELL DEPENDS ON ITS UNIQUE FEATURES AND BARRIERS

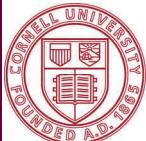
Key Findings

- E-learning is comparable to traditional teacher-led classroom instruction in terms of effectiveness.
- E-learning has specific features that may influence learning: content, immersion, interactivity, and communication.
- Barriers to e-learning adoption include fraud and cheating, digital divides and their impact on low income and underprepared students, and cost issues.

Topic: How Effective is E-Learning Relative to Traditional Learning?

E-learning has grown at a considerable rate, and current projections show no slowdown in the near future. The National Center for Education Statistics estimates that between 2000 and 2008 the share of undergraduates enrolled in at least one online course grew from 8 percent to 20 percent (Radford 2011). The Babson Survey Research Group estimated that by the fall of 2010, 31 percent of all higher education students were taking at least one online course (Allen & Seaman 2011). Further, they estimated that between 2002 and 2010 online enrollments grew at a rate of 18.3 percent, compared with just over 2 percent for the overall postsecondary education student body.

This study refers to e-learning as all forms of electronically-supported instruction, which range from videotaped lectures posted on the Internet; learning management systems such as Blackboard that distribute lecture notes, syllabi, and assignments;



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online collaborative simulations; and interactive systems that use artificial intelligence to deliver customized instruction (Bacow et al. 2012).

This study reviews four meta-analyses that have been conducted on e-learning research. By combining the results of multiple studies, researchers can find an overall estimate of a particular relationship. Although the methodology of the studies included varies significantly, these meta-analyses provide the most comprehensive assessment of the effectiveness of e-learning relative to other delivery media.

The Study Questions

- How does the effectiveness of e-learning compare to more traditional forms of instruction?
- What features of e-learning influence its effectiveness?
- What barriers to e-learning exist?

General Views of E-Learning Effectiveness

Two opposing perspectives among researchers regarding the effectiveness of e-learning: Richard Clark (2009) sees technology as a tool to be manipulated at the hands of instructional design, pedagogical approaches, and teacher practices, and believes it should have no impact on the learning success of the student. Other researchers say that by being able to customize instruction to the learner and increase interactivity, e-learning can lead to better educational outcomes (Bailey et al 1994). A majority of the general public, however, believe that online courses offer less educational value than traditional classroom courses (Taylor et al 2011).

Data Source

This study reviews four meta-analyses: one by Bernard and his colleagues (2004), two by Sitzmann and her colleagues (2006 and 2011), and one by Means of the U.S. Department of Education, Office of Planning, Evaluation, and Policy Development (2010).

1. Bernard's analysis examined 232 studies from 1985 to 2002

2. Sitzmann's first analysis examined 96 published and unpublished studies
3. Sitzmann's second analysis examined 55 reports
4. Means' analysis examined 45 studies

These meta-analyses show that e-learning is as effective as traditional classroom techniques.

Specific Features That Influence E-Learning

The question is not 'does e-learning work,' because it does. The question is what features influence the effectiveness of e-learning? Kozlowski and Bell (2007) identified four categories: content (level of richness, as exemplified by a multimedia presentation), immersion (level of realism), interactivity (between learners, between learners and instructors, and between learners and simulated characters), and communication (different communication channels as well as allowing learners to communicate synchronously in real time). Research into these influences on e-learning will provide insights that will help curriculum planners choose which types of e-learning are appropriate for which courses.

Specific Barriers That Influence E-Learning

Possible barriers to effective e-learning include academic integrity (tests not performed in a traditional classroom provide ample opportunities for cheating); 'digital divides' which impact access to high-speed technology, as well as using it only for entertainment; academically underprepared students who may lack in such self-regulatory skills as self-monitoring and self-evaluation; and the cost effectiveness of not only developing the content, but providing technology and support over the continuing use of the courses.

Takeaway

- E-learning can be just as effective as traditional methods of learning, and in some situations, may be better. It must be designed to meet the learning objectives.
- Additional research into the features that may influence e-learning is needed. These areas include: content, immersion, interactivity, and communication.
- Underprepared learners may struggle to flourish with an e-learning approach, and the cost of implementing and maintaining a high-end e-learning experience may be prohibitive.

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